

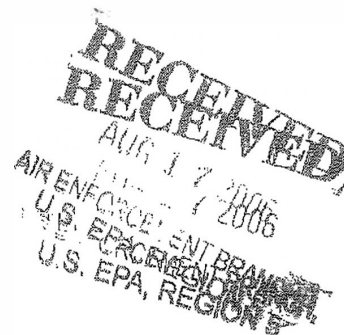


# BADGER LABORATORIES & ENGINEERING INC.

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August 14, 2006

Mr. Jim Crawford  
DEPARTMENT OF NATURAL RESOURCES  
Northeast region  
2984 Shawano Ave. Box 10448  
Green Bay, Wisconsin 54307-0448



Subject: Emission Testing at Carmeuse

Dear Mr. Crawford:

The following data is submitted regarding the source test plan of sampling for Particulate emissions to be followed at Carmeuse NA. Carmeuse NA is the new owner of the Rockwell Lime Company. The facility is located at 4110 Rockwood Road, Manitowoc, WI. The emission tests will be performed on the discharge of the baghouse (C01) controlling emissions from kilns one and two. The testing is being performed to demonstrate compliance with MACT and Title V permit conditions. The testing is scheduled for October 18, 2006 starting at approximately 10:00 a.m.. Mr. Randall Boisvert is the Carmeuse NA contact (phone #773-978-5349). The plant contact is Mr. Don Brisch (phone 920-682-7771).

The emissions test will be run by Mr. Bruce Lamers who has more than fifteen years experience in stack emission testing.

The Particulate sampling equipment consists of a Millennium Instruments, Mill5 Stack Sampler. A schematic of the sampling train is included as Figure 1. Applicable methods for Particulate testing are EPA Methods 5 and 202 which include EPA Methods 1-4. A Hayes Orsat Analyzer will be used for determining the gas stream molecular weight.

The emission test will consist of three repetitions of these methods. The arithmetic mean of the test results will be supplied as well as all raw data from each test run. The testing procedure is summarized as follows:

1. Determine sample points and initial velocity traverse.
2. Moisture, temperature and molecular weight determination.
3. Emission sampling.
4. Sample recovery.
5. Analyses.
6. Calculations and report.

The testing will be performed on the discharge of two kilns identified as kiln #1 and #2. During the testing both kilns will be operated as close to capacity as possible. Kiln #1 is rated at 300 tpd of stone feed and will be operating in the 220 tpd range. Kiln #2 is rated at 600 tpd of stone feed and will be operating in the 560 tpd range. Additional process information supplied by Carmeuse NA is shown below.

Lime is the product of the high-temperature calcination of limestone. The basic procedures in the production of lime are (1) quarrying the raw limestone, (2) preparing the limestone



for the kilns by crushing and sizing, (3) calcining the limestone to quick lime ( $\text{MgO} \cdot \text{CaO}$ ), and (4) miscellaneous transfer, storage and handling operations. A portion of quick lime is conveyed to the storage tanks to feed the hydrator. From these tanks, the quick lime is mechanically conveyed into the pressure hydrator. Water is added and the quick lime is converted to hydrated lime.

Coal, Petroleum Coke and Natural Gas are used as fuel in the rotary kilns. The Coal/Coke blend is pulverized in a coal mill and mixed with hot air drawn from a hood enclosing the combustion chamber of the rotary kilns. This coal/air mixture is pulled by a blower and introduced in the rotary kiln through a burner pipe. Air is also introduced through a product cooler where hot lime is cooled with fresh air before it is discharged. The kilns have contact coolers where air is drawn into the rotary kiln with the help of induced draft fans which pull the flue gases at the tail end of the kiln through a duct. The flue gas is sent through cooling towers, then to an induced draft fan and then cleaned in a baghouse before being discharged to the atmosphere. At the Rockwell facility, the exhaust gas from two separate kilns discharges into a single baghouse with a single exhaust stack.

The sampling ports from the baghouse lie in a straight section of 6 foot diameter stack, 0.9 diameters downstream and 1.2 diameters upstream from any flow disturbance. The stack does not meet the minimum requirements of EPA Method 1, however, we have been informed by plant personnel that compliance emission testing has been performed on this stack twice before under these conditions. A cyclonic flow check was also performed in 1999 to verify flow conditions. Based on the above the Alternative Measurement Site Selection Procedure will not be performed and the testing will be performed at 24 points. Sampling time will be determined after initial velocity measurements are made. A minimum sampling time of one hour will be used to obtain at least 30 cubic feet through the dry gas meter on each run.

All required process throughput operating data will be monitored and recorded by Carmeuse NA personnel. The MACT Particulate emission rate limitation for this source is 0.12 pounds per ton of stone feed. This limit does not include the back half condensibles (EPA Method 202). The Title V Particulate emission rate limitation is 7.5 pounds per hour for each kiln or a combined limit of 15.0 pounds per hour.

Please call me at 920-729-1100 or 800-776-7196 if you have any questions.

Very truly yours,

BADGER LABORATORIES & ENGINEERING  
WDNR Certified Lab No. 445023150

  
Bruce F. Lamers  
Project Manager

cc Air & Radiation Division  
US EPA Region 5

Mr. Randall Boisvert  
Carmeuse NA



## DESCRIPTION OF INSTALLATION

2-1

Rockwell Lime Company produces lime for commercial sale. The kilns are equipped with a baghouse to control particulate emissions.

The testing will be performed at the baghouse stack. The stack is equipped with six ports. Four of the ports are located on the same cross sectional plane with the two remaining ports located on a plane eight inches down stream. The four ports have been labeled one (1) through four (4). Traverse and particulate sampling will be performed using ports 2 and 4.

A schematic of the process indicating sampling locations is shown in Figure 2-1.

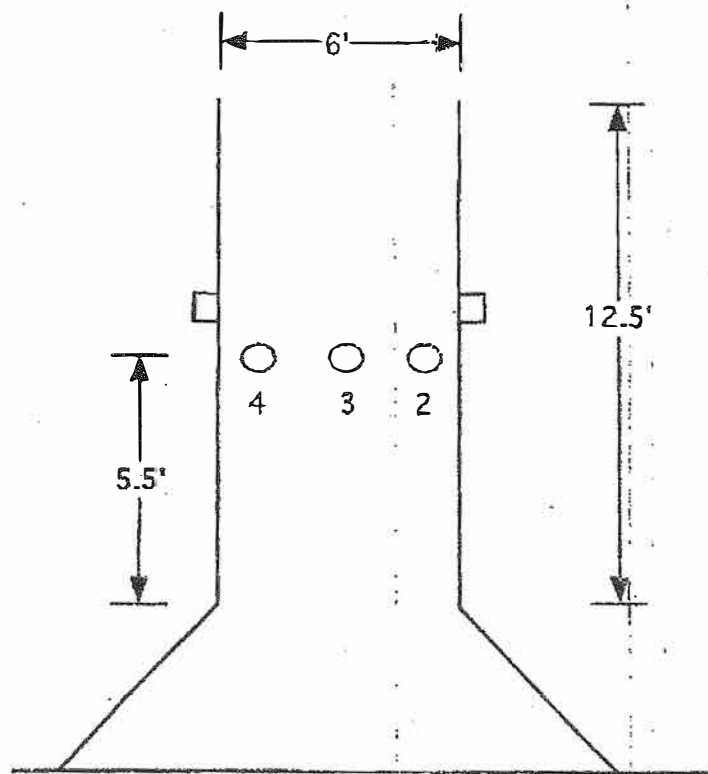


Figure 2-1: Process Schematic



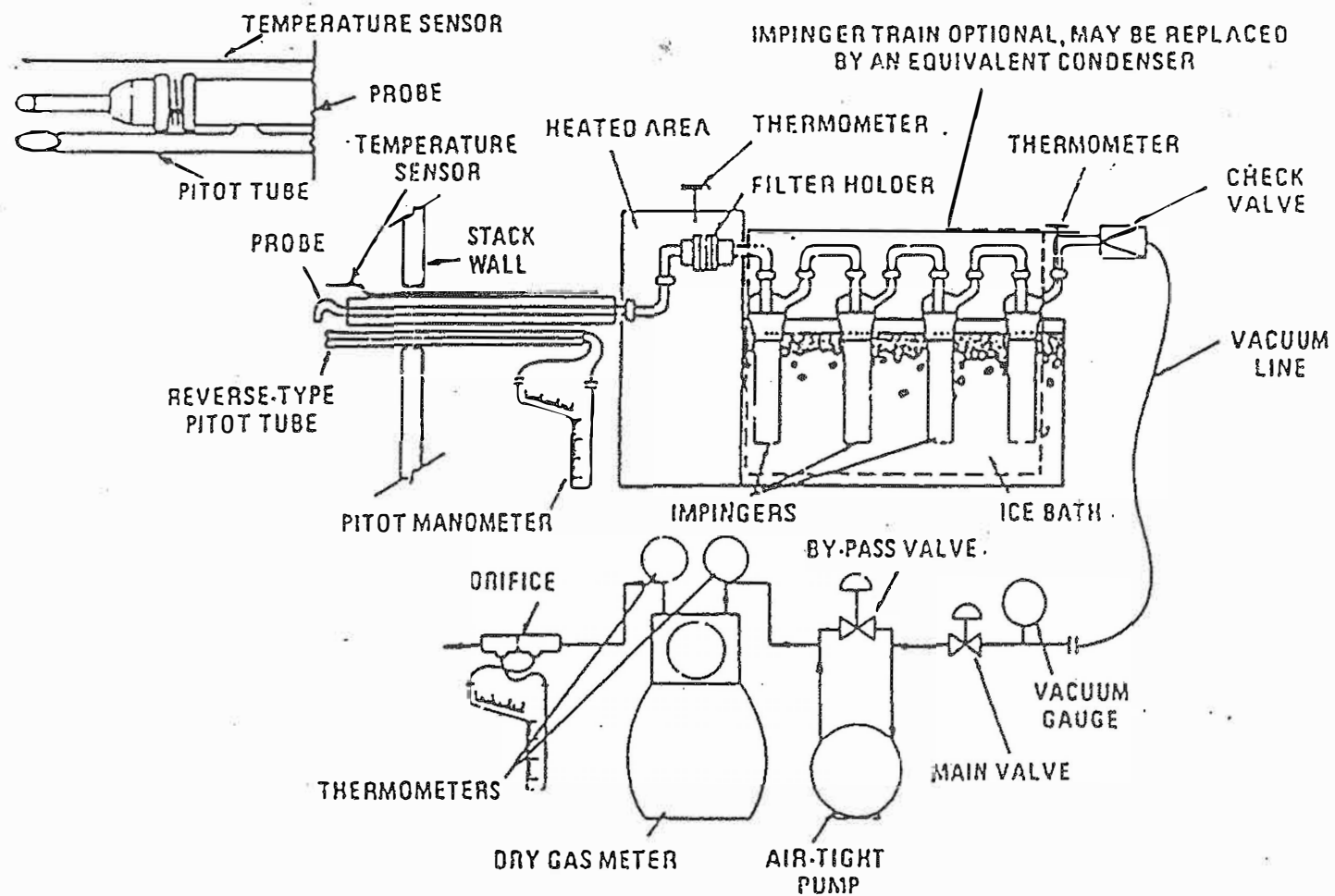


Figure 5-1 Particulate-sampling train.



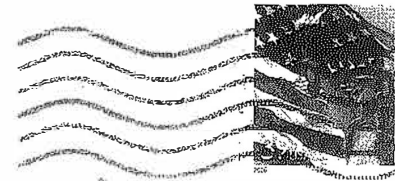


CHEMISTS  
ENGINEERS

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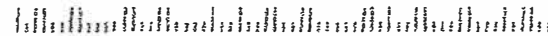
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original to Costa  
8/18/06 name change  
copy to Stephanie  
copy to File Room